A272, A276 Comparison

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As I recall the A276 antenna control, it had a 3 position switch which allowed "Continuous", "Manual" or "Sector" mode of operation. "Continuous" gave a turning rate of up to 10 rpm in either direction via a Centre Zero Pot. "Manual" gave contol to a small crank handle, ie the antenna would auto-follow in either direction as fast as the handle could be turned. "Sector" allowed the antenna to be positioned manually on a desired bearing, and a Sector Pot controlled the angle of the swept sector about this bearing, ie 5- 10 – 20 – 30 – 40 degrees of sector. The antenna table for the A276 was stabilised in azimuth, ie the PPI coil drive was stabilised

The A272 was a completely different kettle of fish from the A276. The antenna was modelled on the English 270, and consisted of two cheeses mounted one above the other. The lower transmitted, the upper received. The cheeses were about 4 or 5 feet across the horns, and the whole antenna stood about five feet high. It was contained in a plywood lantern, approximately 8 feet in diameter and 5 ½ feet high. The antenna was mounted atop the 20 inch Searchlight platform. Access to the antenna itself was via a removable plate in the lantern base.

The antenna was motorised using the same system as the BAP/H/M (for A286Q) ie the AS1 and AS 3 ASDIC controllers. Rotation was limited to 360 degrees, with a 5 degree overshoot each side of dead astern via a pair of travelling limit switches. It was stabilised in azimuth.

A 10 centimetre pipe from the transmitter terminated just inside the base of the lantern. Here it was matched to a 75 Ohm cable which went once around the antenna base (to allow for rotation) before terminating on fixed plumbing at the back of the cheese. The fixed plumbing went through the base of the cheese to within 6 inches of its front, where it ended in a 20 cm dipole (tuneable). The RF from the dipole was reflected by a plate across the front of the cheese, and came roaring out of the cheese in a solid beam. The Rx system was identical with a separate 10 cm pipe at the back of the receiver. (No TR switch – how primitive!).

Like the A276, the A272 was a spark gap modulated job. But here the similarity ends. The Tx/Mod unit was contained in a standard AWA crackle finish box about 3 feet wide, 1 and ½ feet deep, and 4 feet high. The top 1 foot section was the Tx, and the rest was the modulator. (For Tx maintenance it was necessary to lift the Tx clear of the Mod locating studs, and remove the front of the unit. Considering the weight of the old magnetron permanent magnets units, it can be understood why Corvette Radio Mechanics had weak wills and strong backs). To make matters worse, the unit was positioned just outside the door of the Skipper's cabin, and under the bridge ladder. In an attempt to protect it from sea water, a metal cabinet had been added, which further restricted access. However the cabinet did screen out some of the Tx noise.

Inside the grey crackle box, the modulator was a fairly conventional thing. A couple of front panel switches, a form of Variac, power transformers, C-1, a resonant line, and a rotary spark gap. The Tx, in the upper tray, consisted of a magnetron and associated pieces, plus an odd piece of tunable plumbing which matched the output of the magnetron to the 75 Ohm cable and the 10 cm antenna feed pipe. The spark gap was another odd thing. It was like the double ended rotary spark in the A286Q, except that the stator of the motor could be moved manually to correct the phase of the spark. (one could tune for maximum smoke!)

The other difference was in the spark gap itself. The fixed set-up here was a point on one side, and a ball on the other. The rotating bit consisted of a ball on one side and a gramophone needle on the other. So the spark jumped from a fixed point to a rotating ball, then from a very fine moving point to a fixed ball. The needle points were replaceable, and as a Naval Stores item, their progression was from Naval Stores for service in the SRE gramophone, and then to the A272.

The Radar office did not change much when the A276 replaced the A272. In the 20th Minesweeping flotilla the A276Q was on the right as the door was opened, with the 2 A272 racks next in line. All 3 racks faced forward. This compartment was formerly the Skipper's bathroom, and under the racks, the four feet of the removed bath could be seen clearly. This

compartment measured 5 feet by 5 feet by 8 feet high.When facing the 2 A272 racks, the one on the left was 4 feet high, the top 12 inches of which sloped slightly backwards. This was where the A scan was mounted (a complete A276 A scan). Immediately below this was the AS3 antenna control, with the AS1 Relay Panel in the next drawer down. The rack on the right was full height. The receiver waveguide terminated on the deckhead immediately above this one, with a 75 Ohm cable finding its way down to the front of the receiver about 12 to 18 inches below. The first panel down was the Radio Mechanic's hideaway. It contained ALL of the test equipment (a model 7 Avometer), both equipment manuals, and a carton of Craven A.

Next was the receiver, which was a prototype of the one in the A276. Then there were the trays containing the cumbersome power suppies.

The switches and regulators etc for starting the Rotary Power Supplies were all located on the forward screen of the office. The A4 motor alternator for the A286Q was located about 4 feet off the deck in the Barbette for the 4 inch gun (on the sailors' mess deck). The forward "donk" for the W/T office was immediately below it. The A7 motor alternator for the A272 was mounted at deck level outside the Coxwain's office/cabin. It served 3 purposes in life. One was to supply the Radar, another was to supply the clippers of the Chief Stoker's Hairdressing Firm, and the third was to keep the Cox'n awake at night